

REMARKS

This is a full and timely response to the Office Action of December 11, 2006. By the present amendment, claim 20 has been amended and new claims 24-26 have been added. Reconsideration and allowance of the application and all presently pending claims are respectfully requested.

Response to 35 U.S.C. 103 rejections

In the Office Action dated December 11, 2006, the Examiner rejected claims 14-23 under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,701,727 to Komatsu et al. (hereafter "Komatsu"). On page 3 of the Office Action, the Examiner has stated that Komatsu does not specifically teach the determination of optimal dispatch schemes for power generation as per the limitations of the claims. However, the Examiner has cited Komatsu for teaching "the analyzing and diagnosis for optimization in managing heat source units for an air conditioner." Based on the present remarks, Applicant submits that these rejections should be withdrawn and that the present claims are allowable over Komatsu individually or in combination with any other prior art of record.

The present invention

As described in the specification and drawings, the present invention relates to managing distributed generation equipment (DGE). Determining when to operate DGE and at what power level can be a rather complex decision, affected by the cost of fuel, the cost of the electric power or heat that is deferred, and, in some cases, the impact of the emissions both from the DGE device and from the central generator, for example. Such determinations must also take into

account that the demands for electric power and heat may not occur at the same time. As an example, electrical load forecasting is very important for power system operators and planners, since many important functions in power system operational planning, such as unit commitment, economic dispatch, maintenance scheduling, and expansion planning are usually performed based on the forecasted loads. Economic load dispatch, optimization and loss reduction involves managing the operation (dispatching) of generation and transmission facilities to produce the most cost-effective result.

The currently pending claims are directed to a method and device (site controller) for managing energy systems such as DGE deployments, wherein the system can adapt to variable changing conditions in real-time to provide adaptable, real-time, site-specific load forecasting. The site controller of the present invention receives dispatch instructions from a remote central controller, in one embodiment, wherein the dispatch instructions offer recommendations for when to operate each generator, at what power level, when to store energy, and what needs take priority. The site controller compares the instructions to local information for further optimization. In this way, the present invention balances remote dispatch commands against *actual load conditions* that are infrequently available at the source of the commands (e.g., the remote central controller).

The Komatsu reference

The Komatsu patent describes an apparatus and method for managing a heat source unit for an air conditioner. Komatsu describes an arrangement that forecasts the time to inspect the heat source unit (see col. 2, lines 9-15) and makes all determinations remotely from the

customer/equipment site (see col. 7, lines 52-62; col. 8, lines 19-41; col. 9, lines 40-54). Thus, Komatsu is not concerned with energy management, forecasting electric or thermal loads or assessing energy requirements *locally* and on the fly. Rather, Komatsu is directed to assessing when to inspect a heat source unit for an air conditioner.

By contrast, the present invention uses forecasting in connection with electric and/or thermal loads. The present invention applies load forecasting based on past load trends and current conditions in order to forecast the anticipated load of a distributed energy generation environment (see page 9, lines 27-29 of the specification as filed, for example). Contrary to the Examiner's assertions on the bottom of page 2 of the Office Action, there is nothing in Komatsu related to the claim language in independent claims 14 and 20 regarding the receiving of forecasted load information associated with on-site power generation and determining a suitable operating point. Claims 14 and 20 refer to "forecasted electric or thermal load information" and there is nothing about the information transferred in Komatsu that relates to *forecasted electric or thermal load information*. Again, the only forecasting in Komatsu is directed to forecasting the time to inspect a heat source unit. This is vastly different from providing forecasted load information to the on-site power generation arrangement.

Further, with regard to the Examiner's position that the step of determining a reliability factor from claim 14 is shown in Komatsu at col. 8, lines 60-67, Applicant respectfully submits that no such determination is made in Komatsu. The portion of the specification cited by the Examiner pertains to signals indicating the condition of the heat source unit, all referenced in temperature and pressure units. There is nothing whatsoever in the cited portion or in the

remaining portions of Komatsu that discusses or even implies determining a reliability factor *including the step of determining at least a temperature de-rating of said at least one unit, a load following requirement, percentage of output capacity, unit availability, a reserve margin or a unit running status as claimed in claim 14.*

Applicant submits that the objective reach of the currently pending claims does not extend to what is obvious in light of Komatsu. Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. See *KSR International Co. v. Teleflex Inc.*, 550 U.S. ____ (2007), citing *In re Kahn*, 441 F.3d 977, 988 (CAFC 2006).

Komatsu relates to forecasting inspection times for heat units on an air conditioner. It is not at all concerned with managing distributed energy systems using forecasted thermal or electric load information and determining a reliability factor as claimed in claim 14.

For these reasons, Applicant submits that claim 14 is allowable as well as each of claims 15-19 and new claim 24, which are dependent upon claim 14.

New claim 24 has been added to include the recitation that the suitable operating point is determined by the remote controller and the additional step of providing a local site controller to determine whether to adjust site parameters based on actual local conditions without communicating with the remote controller. Support for this new claim 24 can be found, for

example, from page 6, line 10 to page 7, line 30 and on page 33, lines 22-24 of the original specification for the present application. As described above, the Komatsu reference makes its determinations at the remote service company and not locally at the air conditioner unit on-site. Thus, Komatsu teaches away from local consideration of actual operating conditions so as to adjust site parameters without communicating with the remote service company computer.

With regard to independent claim 20, Applicant reiterates that, as with claim 14, Komatsu does not teach receiving remote dispatch commands including at least operating point information wherein the operating point information is determined by *forecasted thermal or electric load information*. Applicant has amended claim 20 in the preamble to clarify that the claim pertains to the site controller, along with pointing out that the real-time site conditions are *site controller-determined*. As claimed in claim 20, these real-time site conditions include at least the unit's output, grid draw, load demand, unit status *and* grid connection status. All of these site conditions are associated with the *power generation unit*. Because Komatsu pertains to forecasting the timing of inspection of an air conditioner, it is not concerned with a local site controller that determines the above real-time site conditions and is further not concerned with receiving forecasted thermal or electric load information. For these reasons, Applicant submits that the present invention as claimed in claims 20 and 21 would not have been obvious to a person of ordinary skill in the art considering Komatsu, and Applicant thus submits that these claims are therefore allowable.

With regard to independent claims 22 and 23, as pointed out above, Komatsu is not at all concerned with managing distributed generation equipment. There is therefore no reason at all

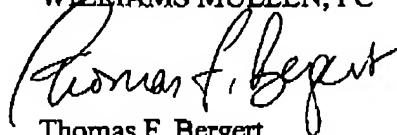
for Komatsu to make any determination, for example, about whether the arrangement is connected to a power grid or not because this determination simply does not apply to the teachings of Komatsu. Applicant submits that the examiner has not provided articulated reasoning as to how Komatsu supports a finding of obviousness against these claims. The examiner's only reference to claims 22 and 23 is the statement on page 3 of the Office Action that "Komatsu teaches the analytical processing for diagnosis in column 9, line 41 et seq." and Applicant submits that a general statement pertaining to analytical processing for diagnosis of an air conditioner's heat source unit cannot be extrapolated into a finding of obviousness against the specific limitations present in claims 22 and 23. The specific determination steps and additional steps based on conditional generation arrangement situations such as whether the site is grid-connected or grid-isolated, for example, are simply not shown or suggested by Komatsu. Applicant submits that one of ordinary skill would not find present claims 22 and 23 obvious in light of Komatsu for at least the reason that claims 22 and 23 involve managing distributed power generation arrangements and their specific conditions, which are completely unrelated to forecasting inspection time for an air conditioner's heat source unit. For these reasons, Applicant submits that claims 22 and 23 are also allowable in their present form.

By the present Amendment, Applicant has also added claims 25 and 26 as dependent to claims 22 and 23, respectively, to point out that the first step of determining whether there is an active command for a power generation arrangement is made by the onsite site controller co-located with the onsite power generation arrangement. Claim 25 also points out that the step of determining site level values is performed by the site controller. Claim 26 further points out that adjusting specified device output levels is performed by the site controller. Because Komatsu

makes all determinations remotely from the customer/equipment site and does not make such local determinations as claimed in claims 25 and 26, Applicant submits that these additional claims provide further distinction from Komatsu and are also allowable. Support for these new claims 25 and 26 can be found, for example, from page 6, line 10 to page 7, line 30 and on page 33, lines 22-24 of the original specification for the present application.

For all of the reasons as stated above, Applicant respectfully requests that the rejection of the present claims be withdrawn and that claims 14-26 be allowed. Should there be any outstanding issues requiring discussion in connection with this response specifically or the present application in general, the Examiner is invited to contact Applicant's undersigned representative at the address and phone number provided below. A two-month extension of time request along with payment of the requisite extension fees and payment for the three additional dependent claims are provided along with the present response. To the extent additional fees are due, the Commissioner is hereby authorized to charge Deposit Account No. 50-0766 in the amount of the required fees, with the exception of the issue fee.

Respectfully submitted,
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